

Kansas State University Libraries

New Prairie Press

Kansas State University Undergraduate
Research Conference

Spring 2019

The Role of Iron Fortification and Supplementation in Addressing Iron Deficiency

Kevin Loya

Follow this and additional works at: <https://newprairiepress.org/ksuugradresearch>



Part of the [Food Science Commons](#), and the [Human and Clinical Nutrition Commons](#)



This work is licensed under a [Creative Commons Attribution-Noncommercial 4.0 License](#)

Recommended Citation

Loya, Kevin (2019). "The Role of Iron Fortification and Supplementation in Addressing Iron Deficiency," *Kansas State University Undergraduate Research Conference*. <https://newprairiepress.org/ksuugradresearch/2019/posters/45>

This Event is brought to you for free and open access by the Conferences at New Prairie Press. It has been accepted for inclusion in Kansas State University Undergraduate Research Conference by an authorized administrator of New Prairie Press. For more information, please contact cads@k-state.edu.

The Role of Iron Fortification and Supplementation in Addressing Iron Deficiency

Abstract

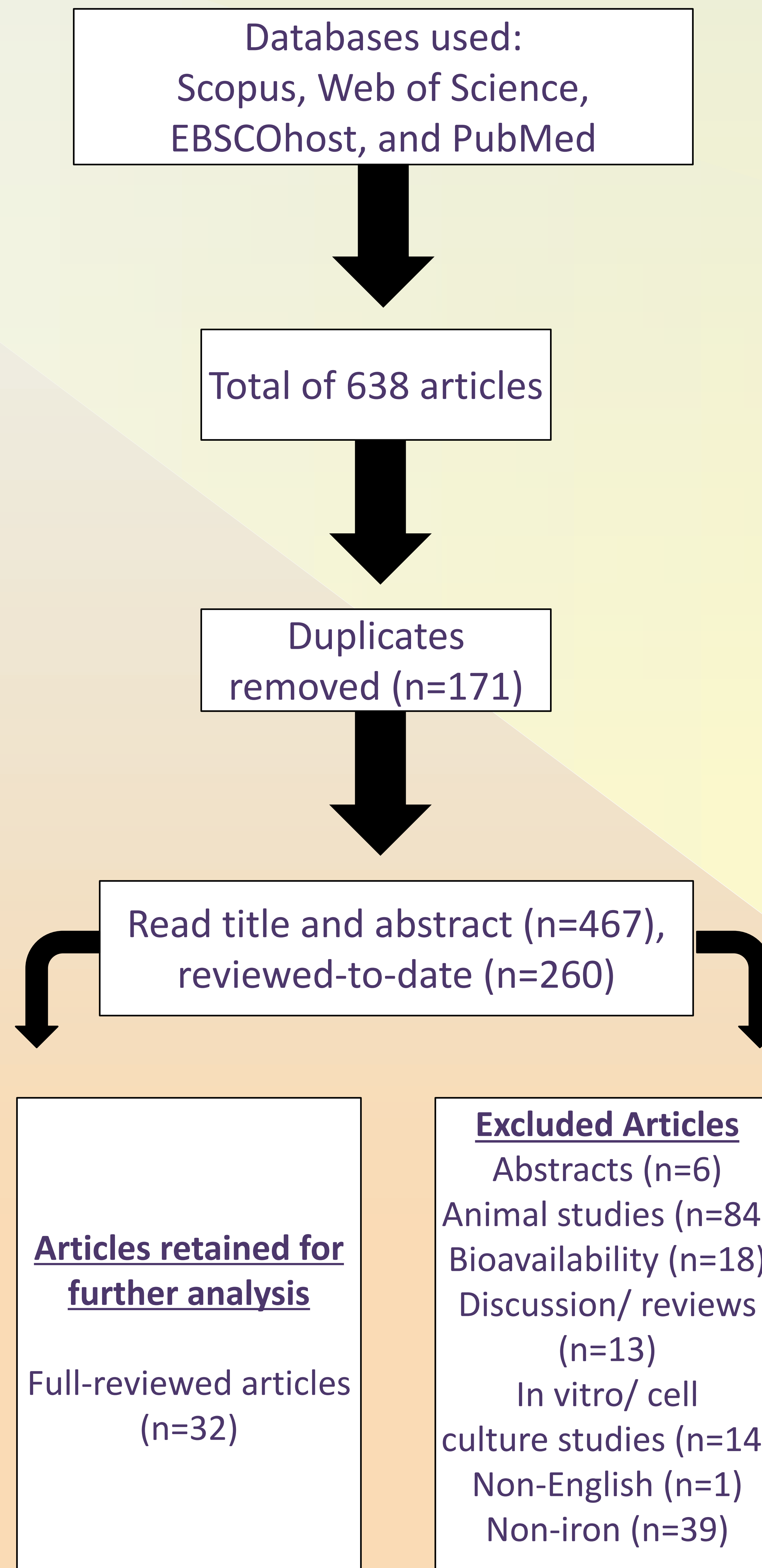
Affecting an estimated 2 billion people, iron deficiency continues to be a leading risk factor causing disability and death worldwide. Iron deficiency is caused when the body fails to produce hemoglobin due to the lack of iron uptake. Ultimately, this can cause iron deficiency anemia. Iron deficiency anemia is the most prevalent type of anemia in the world. There are many different forms that can be supplemented to avoid iron deficiency anemia but determining the most effective form will help us understand future directions of iron fortification. We reviewed randomized controlled trials using electronic databases Scopus, Web of Science, EBSCOhost, and PubMed. Keywords were used to find the articles that would be considered for selection. This method gave us a result of 638 articles in total. Numerous articles were excluded due to the criteria not being met for the review. An article would be selected if it included: the quantity and name of the iron supplemented, the outcome was evaluated and reported, was peer reviewed, involved human clinical trials/ research trials, was performed over a minimum of two weeks, and iron levels were already low in the subjects. Our objective is to examine these articles and determine what iron forms are currently being used to fortify food or are being provided as supplements to combat issues with iron status, including iron deficiencies and which forms (and formats) of iron fortification/supplementation result in the most positive iron status-related biometric outcomes.

Objectives

Examine research to determine:

- What iron forms are being used to fortify food.
- What iron forms are being supplemented.
- Which iron fortification/ supplementation has the most positive result to reduce iron deficiency anemia.

Methods



Next Steps

- Examine the articles more thoroughly to exclude any that are not relevant to the literature review.
- Begin writing the systematic literature review on iron fortification and supplementation.

References

- Iron deficiency anemia. (2016, November 11). Retrieved from <https://www.mayoclinic.org/diseases-conditions/iron-deficiency-anemia/symptoms-causes/syc-20355034>
- Johnson-Wimbley, T. D., & Graham, D. Y. (2011). Diagnosis and management of iron deficiency anemia in the 21st century. *Therapeutic advances in Gastroenterology*, 4(3), 177-184.
- Zimmermann, M. B., & Hurrell, R. F. (2007). Nutritional iron deficiency. *The lancet*, 370(9586), 511-520.

Acknowledgements

- Developing Scholars Program
- Bridges to the Future Program
- Dr. Brian Lindshield and Erin Ward for guidance and aid in the literature review.